

# Technical Report project 6

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## **TECHNICAL REPORT FOR PROJECT SIX**

### **SMARTTECH SALES AND QUANTITY INSIGHTS ANALYSIS FOR THE YEAR 2023**

#### **Outlines**

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#### **Introduction**

SmartTech is a dynamic technology company specializing in the retail of consumer electronics such as smartphones, smartwatches, mobile phones, and laptops. As the demand for smart devices continues to grow, understanding the company's sales performance is crucial for strategic decision-making. This project aims to conduct a comprehensive analysis of SmartTech's sales data to uncover patterns and insights that can inform business improvements and optimize customer engagement.

The analysis will explore various key metrics, including overall sales trends, the quantity of products purchased by each customer, the most preferred payment methods, total revenue generated per customer, and the highest-selling products. By identifying these patterns, the company can better understand customer behavior, streamline operations, and enhance its sales strategy for greater profitability.

## Key Datasets and Methodologies

To conduct this analysis, several essential datasets will be examined, including:

- **Customer Information** – Identifying purchasing behavior at an individual level
- **Product Category** – Classifying products sold (smartphones, smartwatches, phones, laptops)
- **Quantity Sold** – Measuring how many units of each product were purchased
- **Revenue Generated** – Tracking total earnings per customer and product
- **Payment Method** – Analyzing customer preferences in payment types

Microsoft Excel will serve as the primary tool for data manipulation and analysis. Using PivotTables, data will be efficiently organized and summarized to highlight key insights. Furthermore, a variety of data visualization tools—including bar charts, line graphs, and pie charts—will be employed to effectively illustrate trends, highlight outliers, and support data-driven decision-making. This structured approach enables a clearer understanding of SmartTech's sales dynamics and areas for potential growth.

## Story of the Data

This dataset tells the story of an electronic store's sales performance, exploring how different payment types, methods of payment, customer ratings, and shipping options influence purchasing behavior and overall customer experience.

## Data Splitting and Preprocessing Data Cleaning

To create a well-organized and user-friendly dataset, several formatting improvements were implemented. The top row was frozen to ensure that column headers remained visible while scrolling, allowing for easier navigation and reference across large datasets.

All column headers were standardized with proper casing to maintain a consistent and professional appearance, improving both readability and visual uniformity.

The dataset was then formatted as a structured Excel table, unlocking useful features such as built-in filtering, sorting, and dynamic referencing. This table format streamlined data management, made it easier to build PivotTables, and simplified future updates. Together, these enhancements significantly improved the dataset's clarity, accessibility, and readiness for accurate analysis and insight generation.

The industry type of data is Retail/ E Commerce industry

The stakeholders for this project are Store Management/Executives and they use the data to track overall performance, identify best-selling products, and make strategic decisions.

## In Analysis

1. Customer ID 1244 tops the chart and the quantity of goods bought was a total of 25.
2. Customer 1342 generated the highest revenue for the company with a total revenue of \$15,476.
3. For the sales trend report, March recorded the highest sales for the year with a total revenue of \$91,537.51, and the least sales was recorded in May with the total revenue of \$41,492.69.

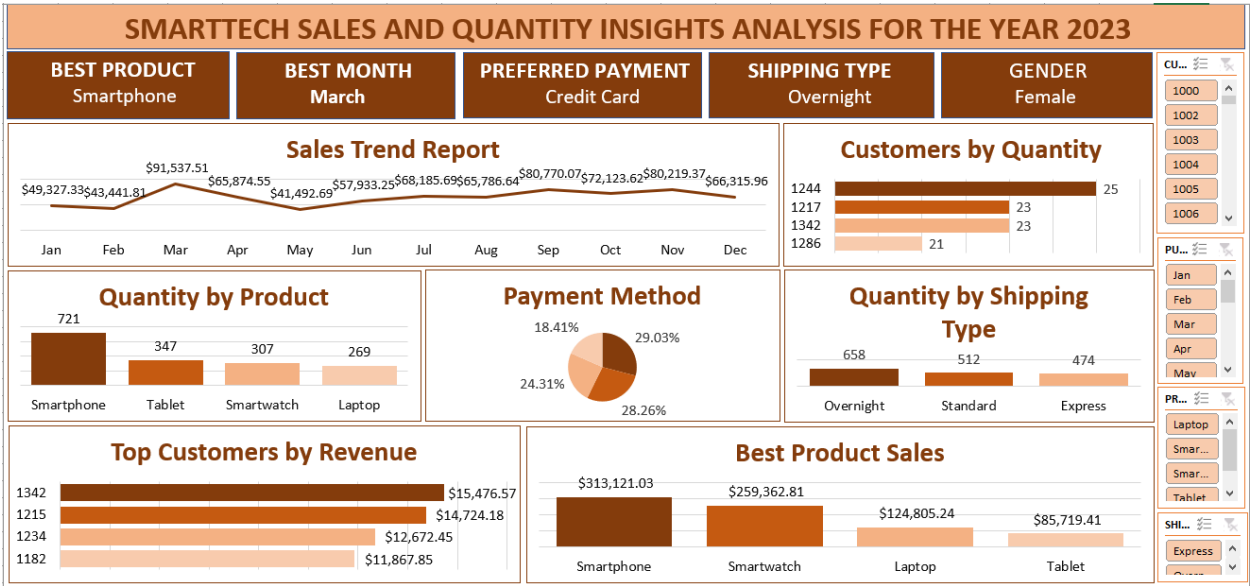
4. The most preferred method is credit card with the total revenue of \$227,277.91, followed by debit card, paypal and cash.
5. Smartphone tops the chart for sales by product category with a total sales of \$313,121.03.
6. Overnight shipping type is mostly used as it recorded a total of 658 quantity, followed by standard shipping type and the quantity is 512, and the least used shipping type according to quantity is Express, with 474 quantity.
7. smartphones recorded the highest quantity of 721, followed by tablet, smartwatch and Laptops.

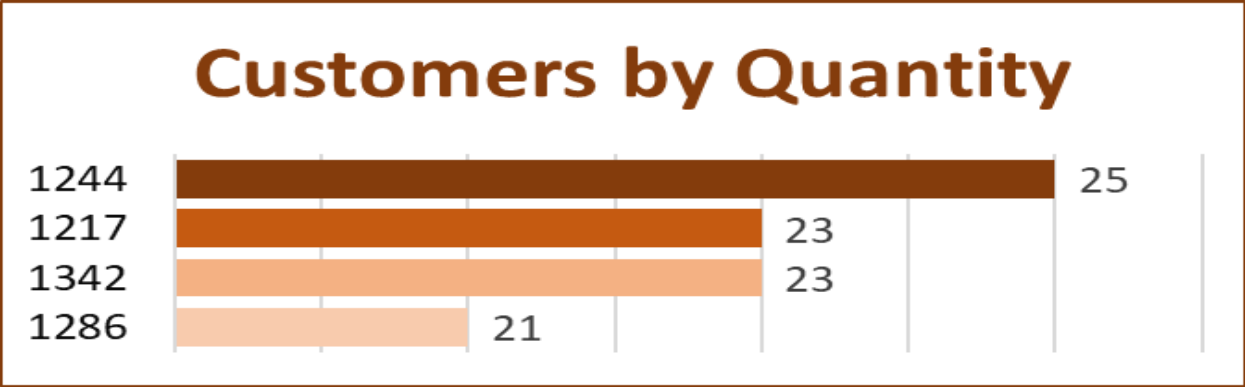
## **Recommendations**

1. Customer ID 1244 (most purchases) and Customer 1342 (highest revenue) should be targeted for loyalty programs, exclusive offers, or early product access.
2. Analyze why March had the highest sales and replicate those strategies (e.g., promotions, campaigns) during low-performing months like May.
3. Prioritize support for credit card payments, and consider promotions (e.g., cashback) to further boost usage and explore adding more digital wallet options to increase convenience and conversion.
4. Continue marketing smartphones as the top-selling category and Use smartphones as an entry point to bundle and cross-sell tablets, smartwatches, or laptops.
5. Reassess pricing, marketing, or product positioning for laptops, tablets, and smartwatches to increase their sales and quantities.
6. Since overnight shipping is most preferred, emphasize it in promotions (e.g., “Free Overnight Shipping” for orders above a threshold).  
Investigate why express shipping is the least used — possibly due to cost or delivery reliability — and make improvements if necessary.
7. Analyze high-value customer behaviors and create similar customer profiles for targeted marketing campaigns.

Data Visualization and Charts

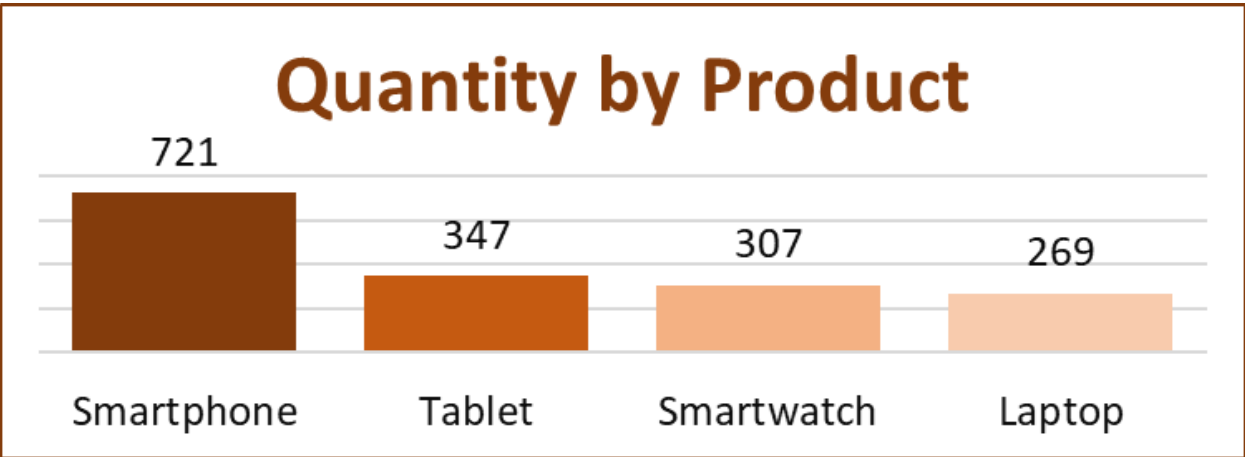
Dashboard





This chart illustrates the quantity of goods purchased by each customer, providing a clear view of individual buying patterns. Among all buyers, Customer 1244 stands out with the highest volume of purchases, indicating a strong buying interest or possibly a high-value customer segment worth further analysis.

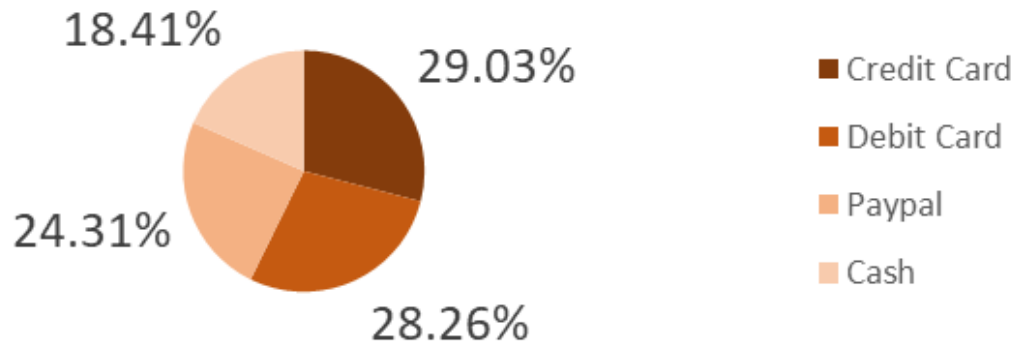
#### Quantity by Product



The column chart visualizes the quantity of each product sold, highlighting smartphones as the top-selling item with 721 units sold. Tablets follow with 347 units, closely trailed by smartwatches at 307. Laptops recorded the lowest sales, with only 269 units sold.

#### Payment Method

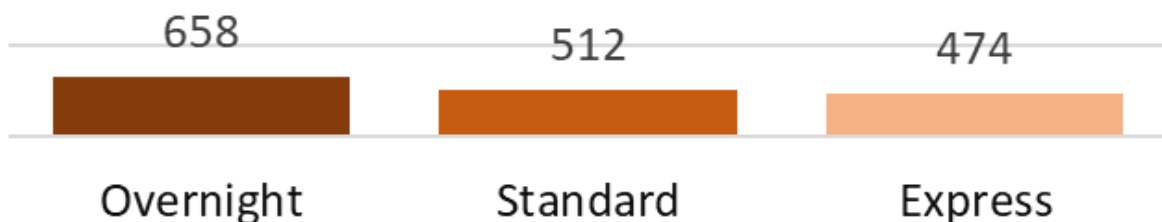
## Payment Method



The bar chart displays the distribution of payment methods used by customers. Credit card transactions lead the chart, accounting for 29% of all purchases. This is followed by debit card payments, PayPal, and cash, reflecting a preference for digital and card-based payment options among the store's customers.

### Quantity by Shipping Type

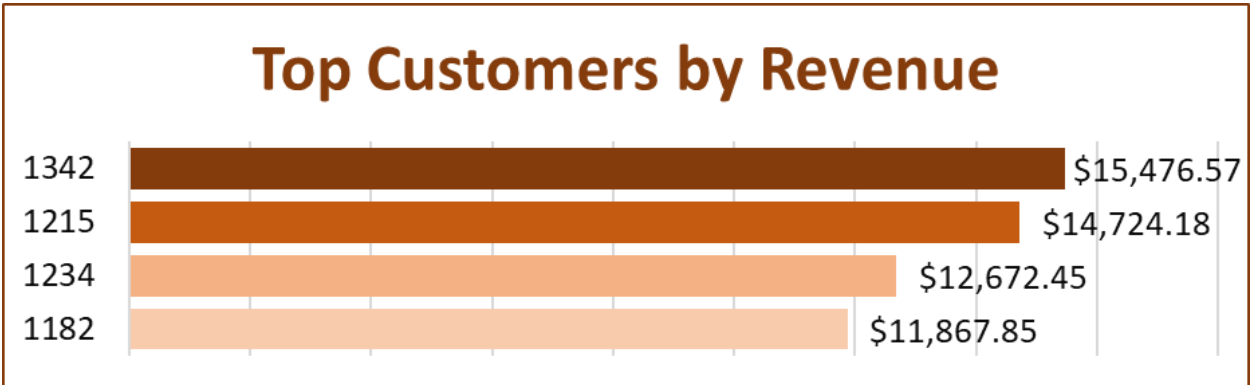
## Quantity by Shipping Type



The data reveals that most customers prefer the overnight shipping option, indicating a strong demand for fast delivery. This is followed by the standard shipping type, which serves as a more balanced choice between speed and cost. Express shipping, on the other hand, recorded the lowest number of selections, suggesting it may be less appealing due to factors such as cost or limited perceived benefit over other options.

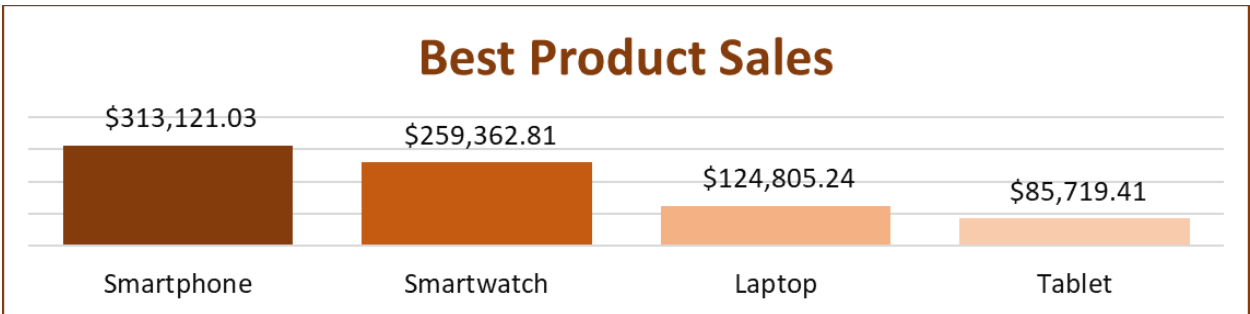


Top Customers by Revenue



This chart displays the revenue generated by each customer, highlighting Customer 1342 as the top contributor with a total revenue of \$15,476. Close behind is Customer 1215, generating \$14,724 in revenue. Customers 1234 and 1182 follow with \$12,672 and \$11,867 respectively, reflecting a strong purchasing trend among these top buyers.

Best Product Sales



This chart highlights that smartphones generated the highest revenue for the year, exceeding \$300,000. Smartwatches followed with over \$200,000 in revenue, while laptops brought in more than \$120,000. Tablets recorded the lowest revenue, contributing less than \$100,000, indicating a comparatively lower sales performance.

Observations

- 1. Customer id 1215 generated a total revenue of \$14,724.18 , and the quantity of goods bought in total is 18; 9 smartwatch and 9 smartphone, paypal is the most

preferred payment type, customer id 1215 patronized in september and december, generating total revenue of \$7,120.71 and \$7,603.47 respectively.

2. customer ID 1234 generated a total revenue of \$12,672.45, smartwatch was the only product the customer got and the quantity is 15 smartwatches totaling \$12,672.45. Customer ID1234 bought goods in May and September worth \$4,224.15 and \$8,448.30 respectively.
3. Customer ID 1182 generated a total revenue of \$11,867.85 and smartwatch is the product bought totalling \$11,867.85 and the quantity of smartwatch bought was 15. The customer preferred method of payment is debit card. For the shipping type, 10 was shipped overnight and the remaining, standard shipping was used.
4. Customer id 1244 h generated revenue with a total revenue of \$11,617.35 , the quantity of goods bought is 25 in total. 15 tablets and 10 smartphones, 13 goods were delivered using standard shipping type and the rest was overnight. customer 1244 patronized in february, july and december with february topping the chart with \$7,911.90 revenue generated
5. For the sales trend report, january recorded total revenue of \$49,327.33 and it dropped to \$43,441.81 in february and march had an increase to \$91,537.51 and this was the highest recorded throughout the year, the least month with the lowest revenue is May with a total revenue of \$41,492.69
6. In terms of quantity, smartphones topped the chart with about 721 units sold, followed by tablets with 347 units sold followed by smart watches and laptops had the least quantity sold which is 269.
7. The most preferred method of payment is credit card as 29% of the customers use it followed by debit card which is 28%, followed by paypal which is 24%, the least preferred method of payment is cash and only 18% of the customers use this.
8. For the revenue generated, smartphones also tops the chart like the quantity and smartphones generate a total revenue of \$313,121.03 , followed by smartwatch which generates a total revenue of \$313,121.03 , followed by laptop and tablet.
9. For quantity by shipping type, overnight tops the chart with 658 quantity followed by standard and express with 512 and 474 respectively. Hence, express shipping type is the least used.

## Recommendations

1. Customer ID 1215 generated a total revenue of \$14,724.18 from 18 items, split evenly between smartwatches and smartphones. Since their purchases were made only in September and December, there's an opportunity to increase their activity throughout the year. Targeted promotions or loyalty programs during off-peak months may help spread their purchases more evenly. Their preferred payment method is PayPal, so maintaining this option and possibly offering small incentives for PayPal users could further encourage transactions.
2. Customer ID 1234 spent a total of \$12,672.45 exclusively on smartwatches, buying 15 units across May and September. This focused buying behavior suggests they have a strong preference for that product type. Cross-selling strategies such as recommending accessories or related products like smartphones could help expand their basket size. Because their purchases peak in specific months, timely reminders or special smartwatch promotions in similar months could enhance repeat buying behavior.
3. Customer ID 1182 also purchased only smartwatches, spending \$11,867.85 on 15 units. This customer chose a debit card as their payment method and preferred overnight shipping for the majority of their purchases. Their buying pattern reflects a value on speed and simplicity. Offering them early access to new smartwatch models or providing occasional free overnight shipping may improve retention and satisfaction. Maintaining smooth debit card transactions and highlighting security or speed of this method could further reinforce their loyalty.
4. Customer ID 1244 bought 25 items, consisting of 15 tablets and 10 smartphones, resulting in a revenue of \$11,617.35. This customer's activity spans February, July, and December, with the highest revenue seen in February. Their use of both standard and overnight shipping suggests flexibility. Bulk-buy discounts or seasonal bundle offers could appeal to their purchasing style. Encouraging purchases in lower-activity months through targeted campaigns might help smooth their buying cycle.
5. Looking at the overall sales trend, January began strong with \$49,327.33 in revenue but declined in February to \$43,441.81. March then saw a sharp increase,

reaching \$91,537.51, the highest of the year. May, on the other hand, recorded the lowest revenue at \$41,492.69. Analyzing what drove March's spike—whether it was successful marketing, new product releases, or strategic pricing—could help replicate that success. May's low performance indicates a need for proactive strategies such as discounts, product launches, or customer engagement activities to stimulate sales during that period.

6. Smartphones lead in terms of quantity sold, reaching 721 units, followed by tablets and smartwatches, while laptops had the lowest quantity sold at 269 units. This suggests smartphones are the most in-demand product, and their popularity could be leveraged through focused marketing, product bundles, or loyalty rewards. On the other hand, laptops may benefit from better positioning, limited-time offers, or highlighting features that differentiate them from other devices to boost interest and sales.
7. Credit card usage ranks highest as the preferred payment method, with 29% of customers using it, followed closely by debit cards and PayPal. Only 18% of customers prefer to pay with cash, indicating a clear trend toward digital and card-based payments. Enhancing the user experience for card and PayPal users, such as secure checkout and faster processing, could further increase satisfaction. For cash users, limited-time offers or discounts on digital payments might help convert them to more efficient channels.
8. Smartphones also dominate revenue generation, with \$313,121.03 earned, followed by smartwatches with the same revenue value, and then laptops and tablets. Since smartphones and smartwatches contribute significantly to revenue, they should remain central to product promotions and new releases. However, laptops and tablets might require bundled deals, educational campaigns, or feature spotlights to improve their sales performance.
9. Overnight shipping is the most utilized shipping method with 658 items shipped, followed by standard shipping at 512 and express at 474, making express shipping the least used. This trend shows a strong customer preference for faster deliveries. Companies can consider offering free or discounted overnight shipping after a certain spending threshold to maintain this preference. At the same time,

reassessing the value and pricing of express shipping could help improve its usage or phase it out if it's not cost-effective.

## **Conclusion**

The analysis shows that a few key customers, especially **Customer ID 1215**, significantly contributed to overall revenue, with smartphones and smartwatches being the top-selling and highest-revenue products. **Credit cards** were the most preferred payment method, while **overnight shipping** was the most commonly used delivery option. **March** recorded the highest monthly revenue, and **May** the lowest. These insights highlight strong customer preference for fast shipping, digital payments, and mobile devices—valuable trends for future sales and marketing strategies.